A new purpose for tattoos: Medical alert tattoos

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Points essentiels

Une nouvelle fonction des tatouages : les tatouages d’alerte médicale

Le tatouage a acquis une popularité grandissante ces 20 dernières années. Les motivations qui poussent un individu à se tatuer sont nombreuses.
Le tatouage a également trouvé sa place en médecine (tatouage cornéen, tatouage de marquage lors d’endoscopie digestive ou de radiothérapie, camouflage de cicatrices, maquillage permanent...). Une pratique émerge aujourd’hui, il s’agit d’un tatouage conçu pour alerter les médecins, ou toute autre personne, dans une situation d’urgence que le porteur a une maladie particulière ou une allergie médicamenteuse. Cette fonction du tatouage est connue des patients, notamment via l’Internet. Les tatouages sont réalisés à l’instigation du patient souvent sans avis médical préalable. Cette mise au point aborde sur ce phénomène peu connu des médecins, ses avantages et ses inconvénients potentiels.

Key points

Tattooing has gained a tremendous popularity for the past twenty years. The motivations that drive an individual to acquire a tattoo are plentiful.

Tattooing has also found its way in the field of medicine (corneal tattooing, gastrointestinal tattooing during endoscopy, permanent make-up tattooing, scar camouflage or radiotherapy field marking...). An emerging application of tattooing is for the purpose of medical identification for conditions requiring special attention during emergency situations, such as patients with diabetes who may be found unconscious due to hypoglycaemia or with allergy to specific medication.

This new phenomenon, (practiced by patients on their own without medical consultation) can be found on the Internet. We review here this practice, which is seemingly underreported in the medical literature with its advantages and potential drawbacks.
Tattooing has gained a tremendous popularity for the past twenty years. The motivations that drive an individual to acquire a tattoo, nowadays, are plentiful [1,2]. They include embellishment of the body, self-identity, expression of personal values, testing one’s threshold for pain, belonging to a social or cultural (sub)-group, resistance against the authority, and spiritual and cultural affiliation [1,2]. Tattooing has also found its way in the field of medicine, with various applications such as corneal tattooing, gastrointestinal tattooing during endoscopy, permanent make-up tattooing, scar camouflage, radiotherapy field marking [3], and more recently as a vaccination technique in research [4] and a means of biopsy site identification [5]. Besides, anthropological discoveries on mummies have shed light on a possible early use of tattooing as an acupuncture method [6]. An emerging application of tattooing is for the purpose of medical identification for conditions requiring special attention during emergency situations, such as patients with diabetes who may be found unconscious due to hypoglycaemia or with allergy to specific medication, but also regarding the end-of-life wishes. This new phenomenon (practiced by patients on their own without medical consultation) can be found on the Internet, but it has not captured attention in the medical literature.

Development of “medical alert tattoos” and their usefulness

Interestingly, a personal medical reason or medical condition as a motivation for getting a tattoo may appear unconventional and even unknown to physicians, but is most likely underestimated. There are some interesting reports regarding the usefulness but also the controversies that are raised by the so-called “medical alert tattoos” in the literature. Blood-type tattoos have been used by the Waffen-SS during the Second World War and also on civilians in Indiana and Utah during the Cold War [7]. Blood-type tattoos have also been used in the French army (figure 1). However, the risk of typing error, erroneous lecture of a blurry tattoo and standardized cross-matching procedures plead against such pre-typing tattoo [7]. Similarly, in 1959, Lake suggested tattooing as a means of indelibly recording vaccination in children, especially for tetanus [8]. Fear of an under-recognized hypoglycaemia for diabetic patients (figure 2) [9,10], or being administrated either an antibiotic [11] or an anaesthetic drug [12], previously responsible for a severe allergic reaction, prompted some patients to choose a tattoo, instead of standard metal pendants such as necklaces or bracelets. It is conceivable that these tattoos are undoubtedly useful, especially in the case of patient’s unconsciousness upon admission to hospital [11], or if a patient is found unconscious elsewhere. However, one should keep in mind that tattoos may fade away with time and become blurry [7], making it difficult to read, or that the words could be misspelled during the tattooing procedure! [12]. The frequency of such tattoos among tattooed individuals is currently not known. A spokesman for the National Tattoo Association in the United States of America recently reported that he was performing about one medical tattoo a year in his parlour [13]. The magnitude of the phenomenon in France is not known. However, a simple glimpse on internet using, for example, the key words “diabetic tattoo” on the internet search website http://www.google.com shows how this trend is far from being a rare phenomenon and has no geographic boundaries. Besides, this phenomenon is not exclusive for patients, but may concern physicians themselves, as we will see below [13]. Interestingly, it is hoped that such patients are not tattoo “collectors”, to allow the tattoo to be immediately spotted by the medical team. Besides, to be useful, tattoos have to be placed in location that can be quickly identified by physicians, nurses and paramedics, i.e. the inner side of the wrist or the chest. Patients with diabetes state that a tattoo is a better solution compared to metal medical alert bracelets or necklaces that often break or are lost, leading to accruing expenses [10]. Besides, bracelet may be removed by the patients themselves [12]. Medical alert tattoos are not only used as a “pragmatic” permanent tool to alert physicians, paramedics or anyone in public places in case of emergency. They appeared to be used by some patients, consciously or not, as a coping strategy to achieve an active mastery of their disease, to reclaim their own body and also to gain others interest about their disease, as for instance a 25-year-old male patient who had his genetic condition, myoclonic epilepsy and ragged red fibres (MERRF) with his own nucleotide number mutation, tattooed on his forearm [14]. Besides, we have the personal experience with...
several individuals with diabetes with medical alert tattoos who described afterward positive feedback from their close environment (family, friend, physician) as well as from strangers (unpublished data). This positive feedback has most likely a beneficial effect on patients, and will help such patients to cope with their chronic diseases.

"Medical alert tattoos" remain tattoos

Tattooing is an invasive procedure. The introduction of exogenous pigments is not harmless and may be responsible for a wide range of cutaneous complications [15,16]. There are no guidelines for patients medical tattooing. On the other hand, to our knowledge, no complications have been reported in the setting of medical tattoo alerts in the cases we encountered (unpublished data) or that have been so far published. It is however prudent to point out that certain precautions should be considered in the pursuit of medical alert tattooing especially in patients with diabetes, pending publication of specific guidelines by diabetes organizations. Since uncontrolled hyperglycemia may lead to wound infections and impaired healing, it is recommended that patients with diabetes should have their blood glucose optimally controlled prior to tattooing. Preferably, such patients should consult with their physicians before pursuing tattooing.

"Medical alert tattoos": towards potential ethical issues?

Recently, tattoos have shed light on the resuscitation and organ donor issues. A Finnish anaesthesiologist, who is currently working in an intensive care unit and faces the daily issue of organ transplant from brain-dead patients, has a permanent tattoo on the chest identical to his Finnish organ donor consent card (figure 3). This kind of tattoo is for help for the medical team to discuss with patient’s family, but it should be stressed that a tattooed consent is not legally equivalent to a signed document [13,17]. Another controversial situation concerns the resuscitation of a patient. Indeed, an elderly patient, with no dementia or other mental incapacity, had “No Resuscitation” and “No Life Support” tattooed on her chest [18]. The patient had also made a Lasting Power of Attorney, agreed to a do not attempt resuscitation order [18]. An American forensic pathologist was recently interviewed about his “No CPR” chest tattoo [13]. But, ethical issues arise for any emergency team who had to decide rapidly resuscitation or not when in front of such tattoo [19]. The absence of law addressing the legal place of such medical tattoos makes it difficult for to know whether they should honour end-of-life tattooed instructions. Some authors have even suggested the institution of a copyrighted “Consider do not resuscitate” tattoo [19]. As stressed above, tattoo lines fade away and become blurrier with time, which may make a tattoo more difficult to read if it is too small. Therefore, tattoos

**Figure 2**

a: medical tattoo alert depicting the diabetic serpent and 6 point red “Star of Life” behind it on the wrist of a diabetic type 1 patient; b: explicit text indicating “Type 1 Diabetes Insulin Dependant” status (pictures provided with the courtesy of the patient)
should be drawn in characters large enough to be identified correctly even 20 years after its completion. However, everyone knows that, if the tattoo remains, the human mind is versatile. An individual may change his or her mind, as illustrated by the case of a 75-year-old male widower, depressed by his geographic isolation and his refractory heart condition, who had “Do not resuscitate” tattooed on his chest [20]. After having had a successful treatment of his heart condition and found a new partner, he realized that he would like to “be resuscitated” and has to deal now with his out-of-date tattoo [17].

Conclusion

Tattooing for purposes of medical alerts is a phenomenon that is now occurring, while physician and the medical community at large are not aware of this growing practice. Few case reports have been reported in the United States and in Europe. The importance of this phenomenon in France is currently not known. It is unlikely that tattoo will replace medical alert jewellery. However, with the increasing popularity of tattooing in Western countries, some patients may choose tattoos as an alternative method to metal bracelet or necklace. A careful look on specialized English-speaking Internet forums of diabetic patients confirms that statement. There are no guidelines for patients medical tattooing. On the other hand, to our knowledge, no complications have been reported in the setting of medical tattoo alerts in the cases we encountered or that have been so far published. Furthermore, they seem to have beneficial effects for the bearer in case of unconsciousness and also in terms of coping strategy.

We neither advocate that patients needing a medical alert device undergo tattooing nor do we systematically refuse such an option for a patient who elects to pursue the tattooing. We believe that a discussion on the motivations for the acquisition of such tattoo and the potential benefits-risks should be assessed with the patient. Lastly, lawyers should know about the existence of such tattoos and define what are their legal validity nowadays.

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